

## CLAIMS

1 (amended). An orientation measuring instrument comprising:

one dielectric resonator comprising a plane being close to or being in contact with a sample and arranged only on one surface side of the sample;

a microwave exciter generating an electric field vector having a unidirectional component at a frequency in the vicinity of the resonance frequency of said dielectric resonator when the sample is present and in an in-sample plane parallel to said plane in said dielectric resonator;

a detector detecting transmission energy or reflection energy by said dielectric resonator;

a rotation mechanism rotating said sample or said dielectric resonator in a plane parallel to said plane; and

a data processor obtaining dielectric anisotropy of the sample from variance of a detection output of said detector following rotation by the rotation mechanism.

2 (amended). An orientation measuring instrument comprising:

a plurality of dielectric resonators comprising planes being close to or being in contact with a sample and arranged close to each other only one the same surface side of the sample;

a microwave exciter generating electric field vectors having unidirectional components, being electric field vectors having directions different from each other at a frequency in the vicinity of the resonance frequency of said dielectric resonators when the sample is present and in an in-sample plane parallel to said planes in the respective dielectric resonators; detectors for the respective dielectric resonators detecting transmission energy or reflection energy by these dielectric resonators; and

a data processor obtaining dielectric anisotropy of the sample from variance of detection outputs by said detectors at said electric field vectors of different directions from said plurality of dielectric resonators.